Listing and Amendments to the Claims

This listing of claims will replace the claims that were published in the PCT Application:

1. (currently amended) Combined demultiplexer and interpolator, ~~characterized in that~~ wherein it receives a time multiplex of N signals and in that it generates N channels at 1/D times the speed of the time multiplex, where D is an integer divider of N.

2. (currently amended) Combined demultiplexer and interpolator according to claim 1, ~~characterized in that~~ wherein it receives a four signal time multiplex and in that it generates four channels at half the speed of the time multiplex.

3. (currently amended) Differential phase detector for generating a tracking error signal from the digitized signals ~~(A, B, C, D)~~ of four photodetectors, including a multiplexer for time multiplexing the digitized signals ~~(A, B, C, D)~~, ~~characterized in that~~ , wherein it includes a demultiplexer / interpolator for synchronizing the samples from the time multiplexed digitized signals ~~(A, B, C, D)~~.

4. (currently amended) Differential phase detector according to claim 3, ~~characterized in that~~ wherein it includes summing means for summing the synchronized samples of the demultiplexer / interpolator to generate a data signal ~~(HF)~~.

5. (currently amended) Differential phase detector according to claim 3 ~~or~~ 4, further including means for compensating an attenuation of high signal frequencies caused by the interpolation.

6. (currently amended) Differential phase detector according to ~~one of claims 3 to 5, characterized in that~~ claim 3, wherein the demultiplexer /interpolator receives a time multiplex of N signals and in that it generates N channels at 1/D times the speed of the time multiplex, where D is an integer divider of N.

7. (currently amended) Differential phase detector according to claim 6, ~~characterized in that~~ wherein the demultiplexer /interpolator receives a four signal time multiplex and in that it generates four channels at half the speed of the time multiplex.

8. (original) Method for combined demultiplexing and interpolating, including the steps of:

    - receiving a time multiplex of N signals, and

    - generating N channels at 1/D times the speed of the time multiplex, where D is an integer divider of N.

9. (currently amended) Method for differential phase detection, including the steps of:

    - digitizing the output signals ~~(A, B, C and D)~~ of four photodetectors,

    - time multiplexing the digitized signals ~~(A, B, C, D)~~,

    - synchronizing the samples from the time multiplexed digitized signals ~~(A, B, C, D)~~ with a demultiplexer / interpolator, and

    - generating a tracking error signal from the digitized and synchronized signals ~~(A, B, C, D)~~.

10. (currently amended) Apparatus for reading from and/or writing to optical recording media, ~~characterized in that~~ wherein it includes a differential phase detector according to ~~one of claims 3 to 7 or performs a method according to claim 9 for differential phase detection~~ claim 3.